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ERGONOMIC STUDIES ON GROUNDNUT HARVESTING AND SHELLING

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Ergonomic studies on groundnut harvesting and shelling were carried out with five farmers used as subjects. Two harvesting techniques, which include harvesting I and harvesting II were investigated. Harvesting I involved plucking of the pods from the plant on the field while harvesting II involved uprooting the whole plant (plus pod) after which the pods were plucked from the plants in a sitting posture. Mechanical shelling were done and compared with manual shelling. The parameters measured on the subjects include heart rate, body temperature, blood pressure, anthropometric measurements at each working postures. The field capacities, energy expenditure rate, shelling capacity spinal extensor muscle force as well as the total reaction on the lumbosacral joint were determined.

Results showed that harvesting II recorded lower values in energy expenditure rates, spinal extensor muscle force, and total reaction on lumbosacral joint but a higher value of field capacity when compared with harvesting I. Mechanical shelling produced higher values in shelling capacity and increase in energy expenditure rate, but lower values in spinal extensor muscle force and total reaction than manual shelling. These lower values obtained on the parameters in harvesting method II and mechanical shelling mean lower physiological stress which is good for the subject.